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Griffin, David

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HOW TO WRITE SILENCE

David Griffin ^a

^a OCAD University

Davidgriffin@rogers.com

This paper will trace the development of a notation research experiment aimed at developing a scoring system for silence. Silence has kinetic roles in social exchanges: quietude, reflective pauses, withdrawal, displays of consent or dissent, reception and interpretation. But how can we score something not present, yet also not absent? Is there a positive notation for this critical issue of performance, of silence in the voice, other than merely the courtesies of extended rests, or blanks in the score? The reader will see inscriptions that oscillate between pictures and writing, and between visual and auditory, exemplifying those capacities of drawing to operate in the spaces between languages. In the context of an experimental music notation, seeking to make an instrumental gesture of silence, how can we draw incipience?

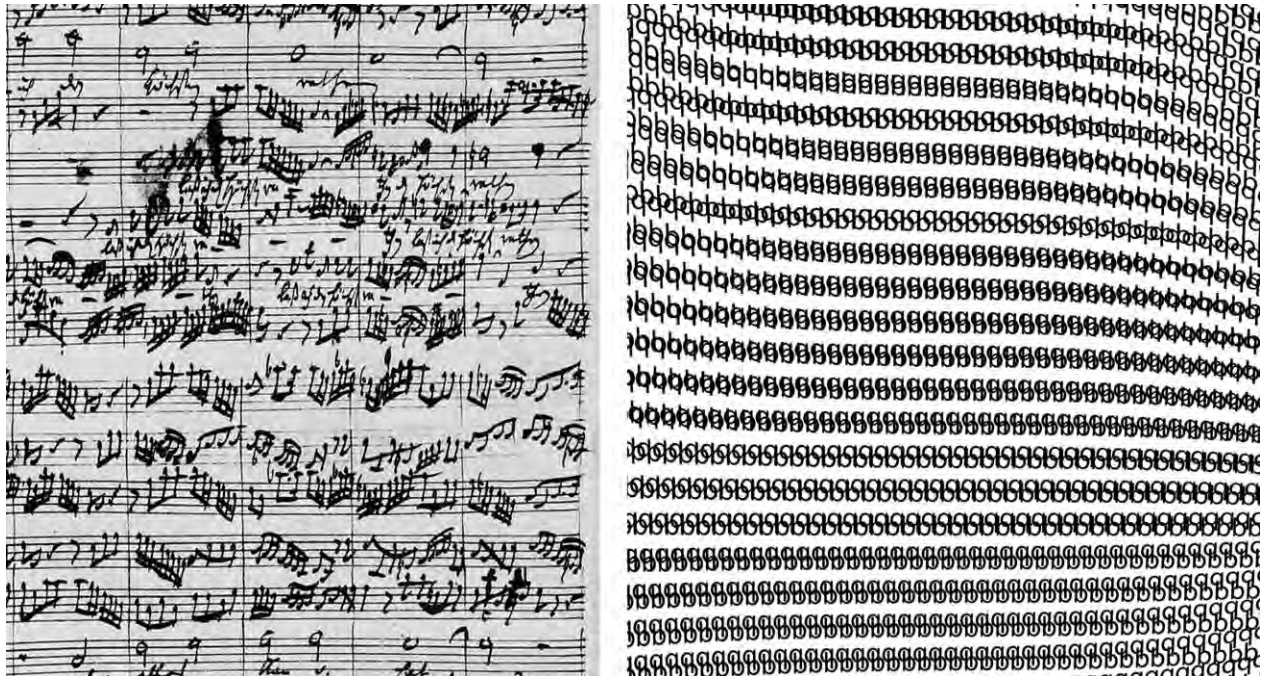


FIG. 1: (LEFT) IN ALLEN MEINEN TATEN (DETAIL), BACH J.S.(1720), IN WINTERNITZ, E. (1964) MUSICAL AUTOGRAPHS FROM MONTEVERDI TO HINDEMITH (VOL.II), PLATE 32; DOVER PRESS, NY. (RIGHT) BQPD (DETAIL), DIGITAL PRINT, GRIFFIN, D (2011).

*We say ourselves in syllables that rise
From the floor, rising in speech we do not speak.*
(Wallace Stevens, "The Creations of Sound")

1 page = 7 inches = 56 seconds
(John Cage, a proportional score for 4'33")

*The vowel is a soul – that is to say, wind – and the consonant is a body – that is, a
limit and the temporal prison of the soul.*
(Michel Serres, "The Parasite")

In my work as a visual artist, which often orbits Music in terms of metaphor and synecdoche, the American poet Wallace Stevens has been a source of great pleasure for how the writing feels, so to speak, in the throat: in its cadence and rhythmic figuring. In the excerpt above, I like the poet's image of the voice rising from a firmament, coming through us in the pitching and prosody of vocalizing; language and the voice an alchemical re-

action, rather than mere speech, telling things. His lyric suggests the work of the artist is to watch this reaction, reporting on, or at least attending to its effects. Meanwhile, in the composer John Cage's philosophy of performance, the ground is impossible silence. Consider 4'33," his infamous silent piece, which is a performance of nothing, excerpting the silence of everything else. And then Michel Serres, a philosopher of science, writes about the flow of noise breached by messaging. All of these metaphors of passage between language and voice, silence and sound, observed and observer, underscore the vitality in the marking-up of experience that we see in drawings of all sorts, whether they are musical, pictorial, lyrical, deductive, or critical.

Deanna Petherbridge pitches it perfectly: drawing is a liminal practice (2008). Any of us who seriously engages with drawing understands it as a practice of bridges and thresholds, reading over and through self-constructed external representations in a kind of search between problem, target and practice. This is the heart of my artistic research, which has focused on systematic notations, particularly those articulate drawings with which we score musical performances, and most importantly among those, the common Western music notation. In general, my artistic and scholarly work has sought to establish such drawing systems (and to toy with them) as control-interfaces that permit users to read and write images of musical experience, and what follows is an account of one such system.

As an example of that work, this paper presents an account of a kind of targeted search for a formal notation for silence. Reading a late draft, one of its reviewers remarked the paper is "front loaded with context, theory, (and) justification," making its narrative harder to follow, perhaps, than it could have been, but for the purpose of writing a conference presentation for an artistic research project, I will argue this front-loading was necessary to distil the odd blend of reading, writing, and drawing which gave the work its final form. In short, my stated goal of a scoring system for silent singing bears an obviously experimental spirit, and good experiments are not simply pulled from a hat. They are arrived at through failures, false starts, and accident, as much as they are by experience and shared knowledge. Acknowledging the cart before the horse, then, I ask the reader simply to be patient. Ultimately, the structure of the paper does end up reflecting something of the tangled timeline of the working process it documents.

The first half presents highlights from a messy experimental drawing discourse which fumbled about quite a bit before steadying itself on conceptually stimulating correlations between visual line and audible timbre. The next section of the text, for example, considers vexing silence (putting aside a detailed exegesis in favor of a mostly mechanical view of speechifying), noting that the peculiar emptiness of silence is a matter of deep, layered interest for anyone interested in musical or non-musical communication. Later in the paper, noise is incorporated through insights derived from the performative work of Kurt Schwitters, with critical and analytical input from musicologists Fred Lehndal (2006), and Wayne Slawson (1987), yielding useful parameters for the creation of the text-based moiré drawings that I finally propose as a working solution, so to speak, in portfolio form. I hope

the reader will see that my reformulation of the threads of possibility are put here in the terms of a positive scoring scheme, a research-based creative practice straddling pictures and diagrams, music and writing, in aid of rendering silence at least articulable in the notation.

DRAWING SILENCE

Setting basic terms, the words noise and silence are defined here relative to Cage and Serres: noise is that which is outside of systems of meaning representation, and silence is the non-presence of audible characters. The staff music notation, that robust visualisation system for music composition and education in Western traditions, has mostly put aside silence and noise as characters in its scheme, exploiting character-string addenda embedded into its graphical timeline as a kind of stopgap solution. But after the ruptures of 20th century music and art, after Schaeffer and Stockhausen, Musique Concrète and electronics, after the asceticism and noisy renunciations of minimalism and performance (Sontag, 2009), after Cage's "Notations" (1969), and Rauschenberg's erased DeKooning (1953, and by the way, a mischievous silencing, and a crucially in-visible drawing performance), silence and noise are understood to be active in the art: they cannot be merely negative spaces in the writing or performance, because they are alive in the exchange.

The title of this paper is tongue-in-cheek, of course. Silence is not some-*thing* to be written, it is a condition. The linguist Dennis Kurzon (in 2007) has given us a useful typology of silence in social exchanges: the quietude of listening, or pauses of reflection, even withdrawal: silence, in other words, as displays of consent or dissent, communicating attitudes of reception and interpretation. But there are also philosophical silences, such as Wittgenstein's in attending to the unspeakable; and there are, of course, musical silences in the form of rests in a written composition, beginnings and endings, the spaces between sound production gestures, or the difficult underlayment described and demonstrated by Cage in a number of contexts.

Silence is both attribute and relation; it resists summary; is incalculable (so it seems), ensuring its fecundity as a principle for creative practice. Silence is presence as much as absence; it is in the voice and on the page, in and of buildings, and films; in gestures of authority or dissolution. How many more words can I throw at silence? Silence is *analogy*.

Speaking of analogy, the sequence below is a word-processed set of signs, each referring in some measure to silence, and each calling to mind some other possible inscription. Some are words, some are characters from the music notation, others speak in a figurative, or a spatialised voice.

└ void, ∪ binding, , 0 , basal, — absence, ♪ pulse, ... , 2×10^{-5} Pa, *silence* — .

There is a problem here (or a solution): the signing act itself is truncation: to focus on a character in the sequence is a suspension of noise; each cypher orders our thoughts, filtering for us a particular silence without exactly pruning its larger, rhizomatic identity.

To my mind, alongside Cage's provocations, the musicologist Elizabeth Margulis has given the best account of unspeakable silence I have come across (in 2007, p.260) – or at least the one that most closely resembles the momentary mechanics of breathless speech that is heart of this notation experiment. Margulis draws our attention to that moment of silence familiar to attentive listeners of organised sound: the quiet passage within/without the composition, bounded by musical activity, where she notes there happens a 'shift from external stimuli to internal experiences as the object of perception.' She names this moment in the wilderness between hearing and listening "meta-listening," and like the little inscriptions in the array above, which hold forth moments of silence, the listening itself becomes the locus of perception.

Meanwhile, Cage offered his audiences several notations for 4'33" (see Fig.2 for examples), but one of that great composition's key insights is that a broader experience of space and time simply waits to be perceived as music: the play framing the spaces of the hall, and the unfolding rustles or other contributions of an audience made at least a little uncomfortable. Supporting this semiotic view, the musicologist Paul Hegarty has written that 'If we listen properly, all noises can be brought into the realm of something like music' (2002, p.194). This is an insight commonly understood to have opened up composition to noise in contemporary music practices. In a scoring context, then, space-time can be taken as a colloidal system of noise and silence, and crafting the utterance becomes a process of discrimination and elimination, perhaps distillation.

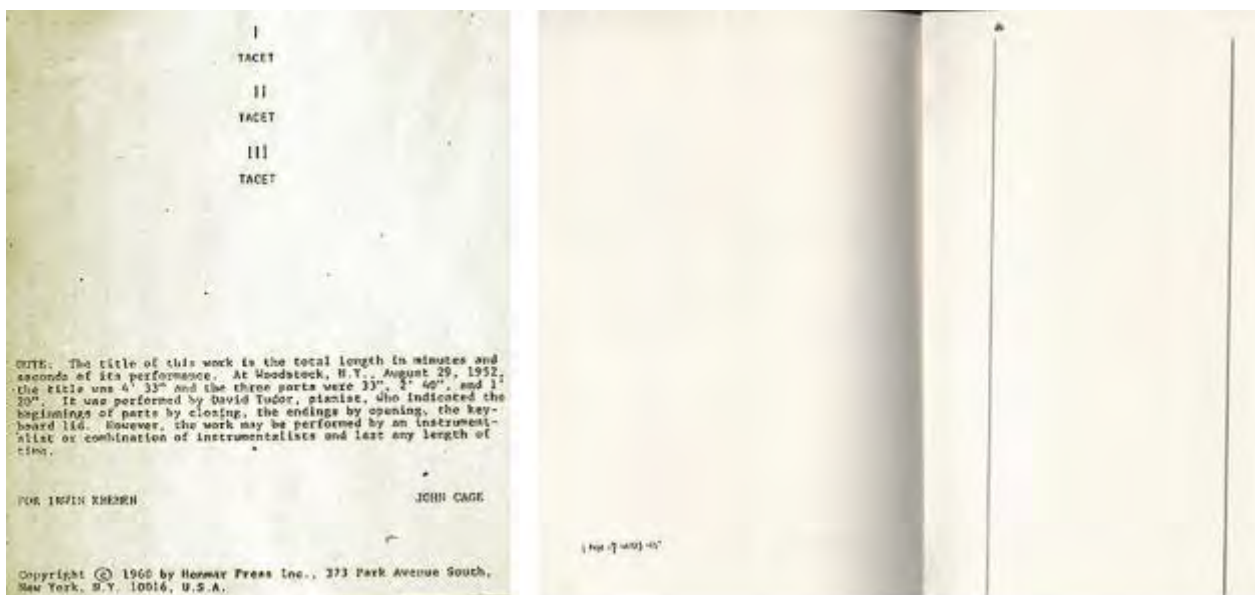


FIG.2: TWO SCORING DOCUMENTS BY JOHN CAGE FOR 4'33." (LEFT) I TACET, CAGE, J (1965); A BRIEF DESCRIPTIVE SCORE, INDICATING 3 MOVEMENTS. (RIGHT) A PROPORTIONAL SCORE, CAGE, J (1952); THE MEASURED SPACES OF THE LEDGER PAGES CORRESPOND TO TIME, AS SPECIFIED IN THE KEY ON THE LEFT SIDE (1 PAGE = 7 INCHES = 56").

At the beginning of this project I asked myself if there is there a positive form of notation for this critical issue of performance – for silence in the voice – other than merely the courtesies of extended rests, the ‘bird’s eye’ of fermata, or equivocating notations of the breath? How might we visualise the gestures drawn between expression and structure, between the ground and the syllable, and the delivered message? In the case of writing for a vocal music, how can we draw incipience? Of course music representation has always been a complex of issues related to periodicity, and properties of sound and sound production – transient things which we cannot see, though we commonly describe them in visual terms, and that most significantly in a score. In the context of an experimental music notation project, seeking to make of silence an instrumental gesture, rather than some merely kinetic sign, we must find or impose a grammar. And that was my creative task.

To provide some personal background, once upon a time I had an experience with a scrap of paper at the New York Public Library, a yellowed irregular parchment, marked over with fluid figures (above left, Fig.1). That hand-sized fragment, attributed to J. S. Bach and framed and hung as any proper drawing might be, triggered in me the moment of connection and clarity that I believe we hungrily seek through our experiences of works of art and music. This is to say that I knew what I was looking at, but the apparent utility of the thing momentarily sifted to the bottom of my recognition, leaving a trace presence as drawing.

To make of that formative experience a sustaining practical method for visual artworks, I adapted a bit of rhetorical text from Cage, contemplating what he termed ‘the relations between paper and music’ (1990, p.429). Paper is a material substance, of course, while music is somehow not; but pushing beyond this trivial observation, it becomes a structural question. Drawings and music notations are both inscribed images of something, but stand differently in reference to those things and to each other by extension. How can these differences be effectively theorised? How are the multi-dimensional complexes of performance fixed on the page? Of course music notations are drawings, but how are the relations between paper and music governed, and moreover, how might we change them to create something new?

In practice, pictorial drawings map from scene to page, while diagrams map logical relations, but music notations – indeed any notations of performance – introduce the consequence-relations of writing, a trembling, additive practice of character-strings, onto denotational drawing. Music notations are writable diagrams of motion and incidence, mapping to and from a conjunctive space-time of performance, with readouts (Griffin, 2012). Music and music notations are both inscriptions, of course, but while we sing the one, actually conversing with singing and song, with the other we orchestrate, nudge, proscribe, and diminish, from a place of thought. Similarly, the Laban movement notation, another form of notation for silence (Guest, 1990), but perhaps as a negative expression of incidental action-sounds, encourages calculations of sinew, bone, and reveries on those onto the page, rendering leftward motions of the hand as characters for computation in both virtual and

actual spaces of activity. Standing for silence, then, paper is a material surface on which we work, but as we seek to shape, fold, and crumple it, the paper becomes a space of time. They are thus a calculus of the body – a reckoning of past, present, and future, with the performance as its sum.

LINE AND TIMBRE

Euclid, the natural scientist, described line as length without breadth, while Klee, remember, called it “point gone for a walk” (1968). And in the panoramic view of anthropology, where Euclid’s abstraction converges with Klee’s travelling point in the cartographic document, the anthropologist Timothy Ingold has suggested that whatever uses to which we may put a line, its basic function is to mark-up relationships: start to finish, body to body, routes and shared properties (2007). Common to all of these evaluations of line are implications of dynamism and measurement.

In contrast, the concept of timbre is notoriously difficult to define, despite abundant research exploring its values as a source of information in perception, acoustics, and communication studies. Habitually identified with colour or texture (the metaphorical “colour of sound”), the complexities of timbre are summarised by musicologist Richard Dannenberg: ‘We picked out the two things we understood, pitch and amplitude, and called everything else timbre. So timbre is by definition that which we cannot explain’ (1993, p.25). Timbral properties of sound have been a keen interest for musicologists involved in digital synthesis and re-synthesis. In their technical analyses, the sensory content of sound is specified in spectrographic displays (Fig.3). Technologies such as the Acousmograph ([Geslin & Lefevre, 2004](#)), for example, allow its users to enter the space of auditory representation to annotate, explicate and even amend specific regions of sound, performing graphical operations on data relationships, revealed in the display.

As a visual artist, I understand drawing as an estimation processing for incomplete conceptions, especially in the ultimate liminal practice of the sketch, where users play with the tics, hesitations and flourishes of the act itself, in a search for salience. In that scumbling search, a number of researchers have observed that our interactions with marks and marking involve imputation, and the telling of a story: we see the bars in a bar graph as containers, and lines as connectors (Tversky, 2002, p.4), reading them as metaphors for quantity, or tendency. Meanwhile, the auditory concept of timbre has equally vital cognitive functions in deciphering the nature and contents of the spaces between sound source and self (Fales, 2002, p.62). As representations, then, both line and timbre are crucial conceptual and physical characters in a search for salience, with similar functions in the revision of experience. There are complex cognitive issues at play here beyond the present purview of this artist, but we can at least say that, in the service of communication, our uses of any symbolic primitives are learned strategies, orienting us to interpretative contexts.

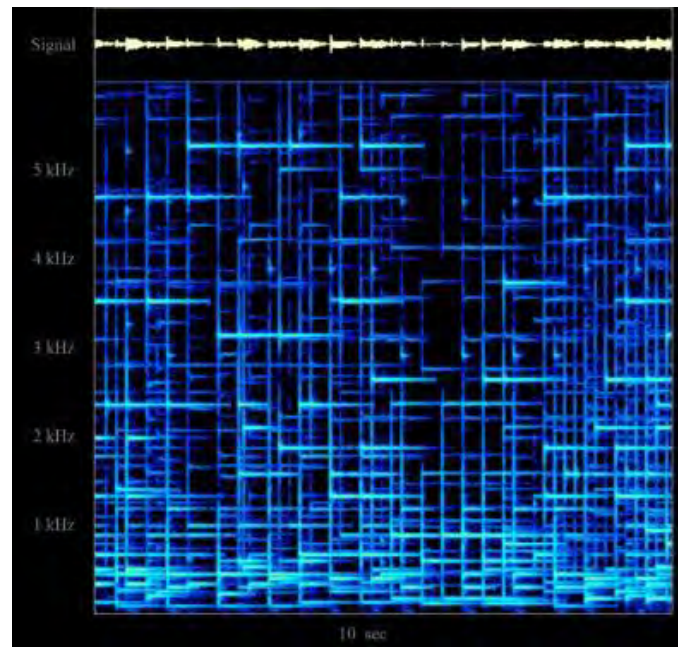


FIG.3: SCREEN CAPTURE OF MUSIC TAKEN INTO A SPECTROGRAPHIC SOFTWARE ENVIRONMENT. THE TIMELINE DISPLAYS LOUDNESS, FREQUENCY, AND PERIODS, AS VALUES OF BLUE (GENERATED BY THE AUTHOR IN SPECTROGRAM16, FREEWARE APPLICATION FROM VISUALIZATION, LLC SOFTWARE).

In response to this long experimental setup, asking how we might write silence in performance, I will now describe a notation system for silent singing, channeling the fricatives and sibilants of speech acts through the logic of systematic drawing (Jongman et al, 2000, is a good starting point for those unfamiliar with terminology in the mechanics of speech. But as a hint, to my ears the words “fricative” and “sibilant” embody their meanings: the first is full of glottal interruptions, while the second escapes from the mouth like steam). So this study took its first productive turn on a commonly held musicological view that the spoken word is a timbral system: we express our thoughts through networks of vocal tones (speech), produced to communicate our needs. With respect to the marking-up of these verbal gestures, Ingold reminds us that reading is never a mute engagement with lines. The characters of writing and speech are aspects of same thing, in performance (2007, p.17). And as my experiences with the verse of Wallace Stevens have also told me in their way, the ineluctable connections between writing and speech are clear in poetic writing. We do not ever really read in silence, but in the fullness of the body, in the pulses of blood and the turning of pages.

And of course there is also the venerable idea that music itself is always an art of the voice, to be spoken aloud, proclaimed or whispered. Thus, in a project of inscribing for the voice, we join the poet and the instrumental music composer, engaged in marking-up strategies for creation and dissemination of audible ideas. This expansive view gives us the word as both score and script, as indication and enaction (see Goodman for clarification, 1976, pp.199-201).

In order to draw out particular experiences in the spaces between words and images, then, this study simply recasts the question in terms of our self-evident desire to make music with our voices, and to write an image of that experience using the difference engine of a notation system. Putting it as query: can we both show and say? Early historical research in this project included a look at Kurt Schwitters' colossal tone poem "Ursonate" – an ad hoc music of the speaking voice if ever there was one (Fig.4). But I also reviewed musicologist Fred Lehrdal's intriguing notations of the prosody of poetry (2001), translating an excerpt from the poet Frost into the staff music notation, bridging symbolic languages in ways both like and unlike Schwitters' performance-poem. The poet works with words and breath, of course, while the musician works with sound and silence, and although they have differences in the experience, Lehrdal observes, they can be understood as 'formally and cognitively equivalent' (2001, p.340). I assert that the drawing of music and speech allow for such translations, in their notations.

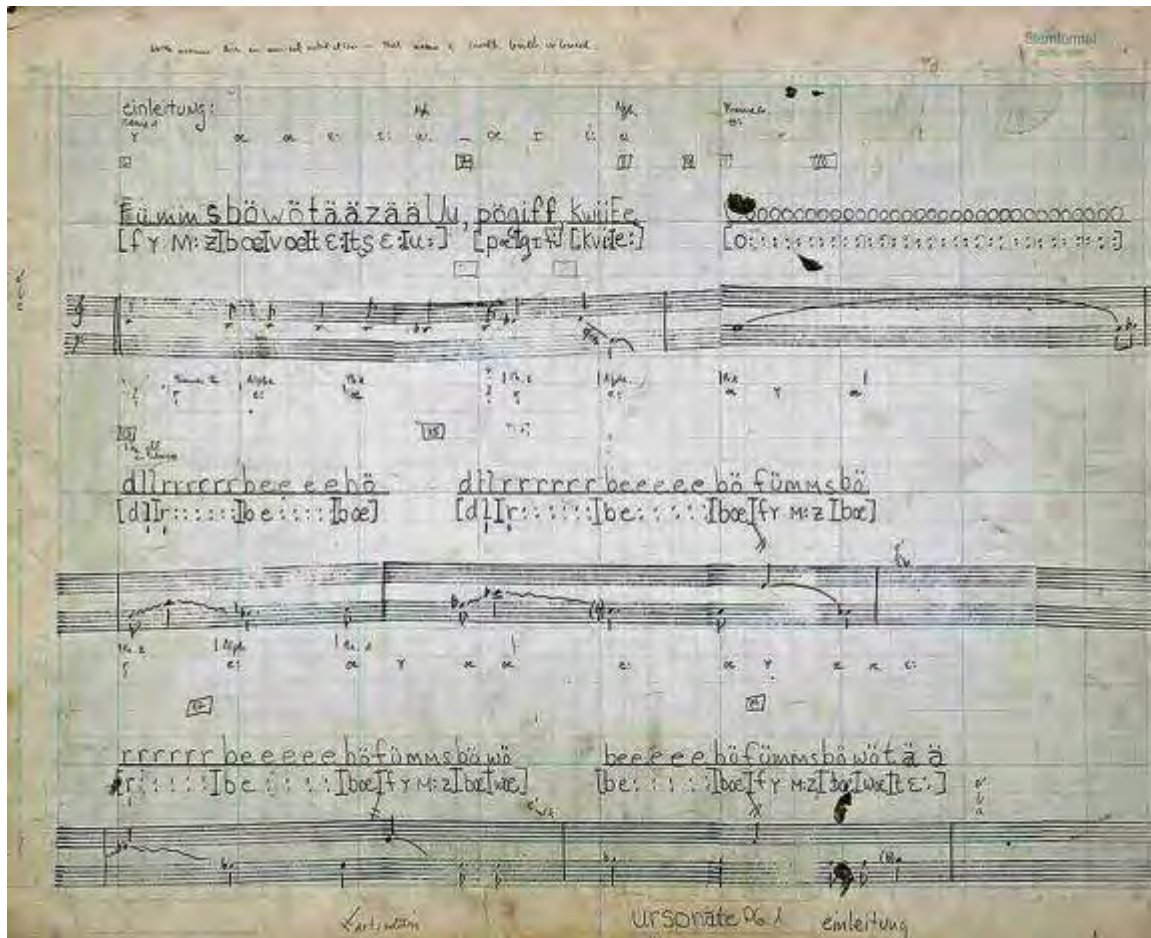


FIG.4: URSONATE, SCHWITTERS, K. (1932) SCORE BY SCHOENBURG, K. AND OX, J (2011), ACCESSED 12/4/12 AT <[HTTP://WWW.JACKOX.NET/PAGES/URSONATE/HANDSCORE_INDX.HTML](http://www.jackox.net/pages/ursonate/handscore_indx.html)>.

In the research I also considered a phonetic-musical scale developed by musicologist Wayne Slawson (1985). I will not detail Slawson's work here, but will summarise his "sound-colour dynamics" as a timbral route to composition, proposing a scale of nine essential vowel

What has emerged from this picture/music primitive correlation is a clear path to notations that focus on the readymade linear representation of consonants from the alphabet (in this case, the English set). Musical signals can be adequately represented by the symbolic score, a document by which the composer gives the terms of an audible calculation to performer and audience. Thus the score shows us where noise and signal differentiate. It is a tally-sheet, a calculus of the body with the performance as its sum. Now remember that in Kurzon's typology, dynamic silence is a character in communication. But in this experimental notation, the scheme's characters are a subset of those gestures involved utterance-making: not pauses, or mere quietude, but the physical-expressive acts which quite literally frame those. Taking the characters of the alphabet as symbolic links between line and timbre, then focusing on that subset which triggers the utterance, the systematic notations worked out in this practice are represented in the drawings produced here (Figs.6-15).

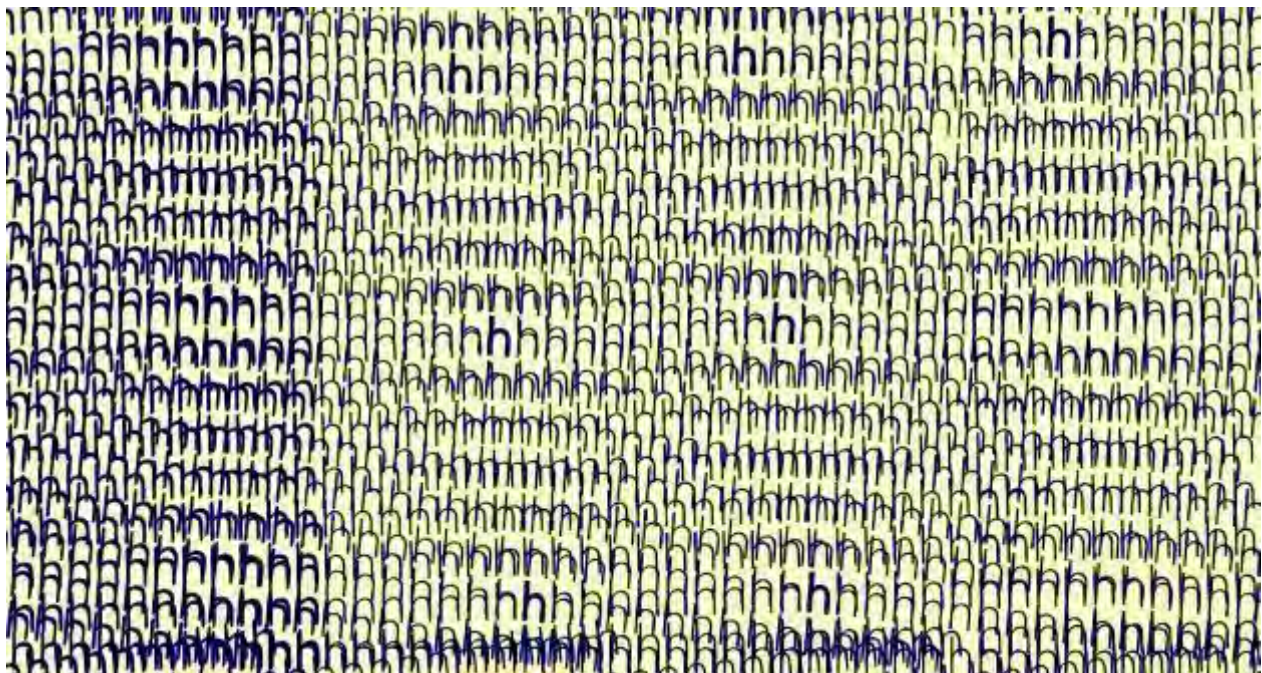


FIG.6: "H NET," GRIFFIN, D (2011); NERVOUS, SPATIALISED SPIN, IS COMPLICATED BY THE BREATHINESS OF "H." HOW THIS MIGHT BE PERFORMED AS MUSIC IS A MATTER OF CREATIVE INTEREST AND SOCIAL INTERACTION.

Using the page-frame as compositional axes, the pitching of the letter-field layers results in interference patterns, perceived in the alignments and separations between them. In the early piece "h net" (Fig.6, above), for example, a moment of spatialisation occurred where the manipulation of layers became the drawing of a picture, and the liminal practice of drawing stepped across a threshold into performance system: the positions of the written characters generate larger wave forms, softening distinctions between pictures, diagrams, and writing. They are compositions from the tensions through which meaningful speech is achieved. Ciphers for writing became pictures, the key to their potential as scores.

Thus the project title "Interference" refers both to the visual structures in the notation, and the nature of its characters as triggers, hedges, and casters for sound production. Sound is

organised in potential, as crosstalk between our natural pattern-seeking tendencies, and waveforms generated by typographical conventions. As opportunities to both see and hear music, they give us the line-by-line organisation of a text: something like the Ursonate, but rather than a relentless cascade of syncopation and rhyme, they inscribe movement-sounds, connected to glottal and labial gestures that quiver in their potency, while never quite articulating. They are thus drawings of not-singing.

Consonants set the conditions for vocal production, which makes the idea of performance of these as scores challenging, but also frankly beautiful. As always, we must ask how we can perform or record organised sound *without* sound. A silent music has been a tantalising possibility after 4'33," and the notation for such vexed utterances should be possible as something other than blank spaces, extended rests, or textual directions. Contemporary practices of computational music present powerful pathways to achieving this, wherein algorithmic, rule-base numerical instructions result in a kind of performance. But I have been focused on drawing as the inscriptive act that permits even the reading of the computation itself.

As an intriguing aside, in the wake of the "h net" drawing, I remembered a particular childhood daydreaming activity, performed most memorably in Sunday Catholic Church services (with apologies to my Mother), of scanning typeset pages and watching the self-organisation of the marks on the printed page become just such spatialised images. I believe the impact of these particular drawings on their maker is connected to that memory of autopoietic dreaming, while additionally becoming that other thing: a score for musical performance.

In the end, in their performance *as Music*, I have considered that they may not be scores for a vocalist, but for a dancer, or perhaps an actor, as movements of the body in space are the very terms of those performance arts, even in the closed, private spaces of the mouth and throat. By rendering breathlessness as a character in the scheme, is it possible these drawings give us a positive notation for silence – for incipient noise as music? As a long-time admirer of Cage, this is in fact a consummation devoutly to be wished. They might become musical performance as pantomime: gestures of unrequited sound, and a kind of dance of musical incipience.

How we may actually make ourselves known through the passage of words, as Stevens put it in his poem, or Cage in his great aesthetics, is not necessarily germane to this one small answer to the question of silence in the voice. Here I present space-time notations that are really meant to be read in choral performance, toggling between seeing and hearing – songs without singing, focusing the reader on performing preparatory vocal actions. If this music is to be declaimed out loud from the score, it must move from eye to tongue in the embodied metaphorical graphical representation of incidence, boundary, and occlusion of the written characters, representing trapped articulations of breath.

As to the question of how to actually read them as scores, I suggest they can be read by anyone willing to enter into the spirit of the game. Certainly, music composition in our current cultural climate is an open system, no longer beholden to the notation as a teaching practice, driven as much by algorithm as audience, and therefore willing to entertain the queries of engineers and painters. In fact, I have asked singers to sing them, and there have been as many responses to this challenge as there are singers to meet it – a conclusion also devoutly to be wished for any multi-media artist in the 21st century. Leaving aside the need to define music other than as the organisation of sound, then, they show compositions of breathless sounds, if such a thing can be said to exist. Let's just say that the English language reader is asked to try to imagine a performance that happens at the tip of the tongue.

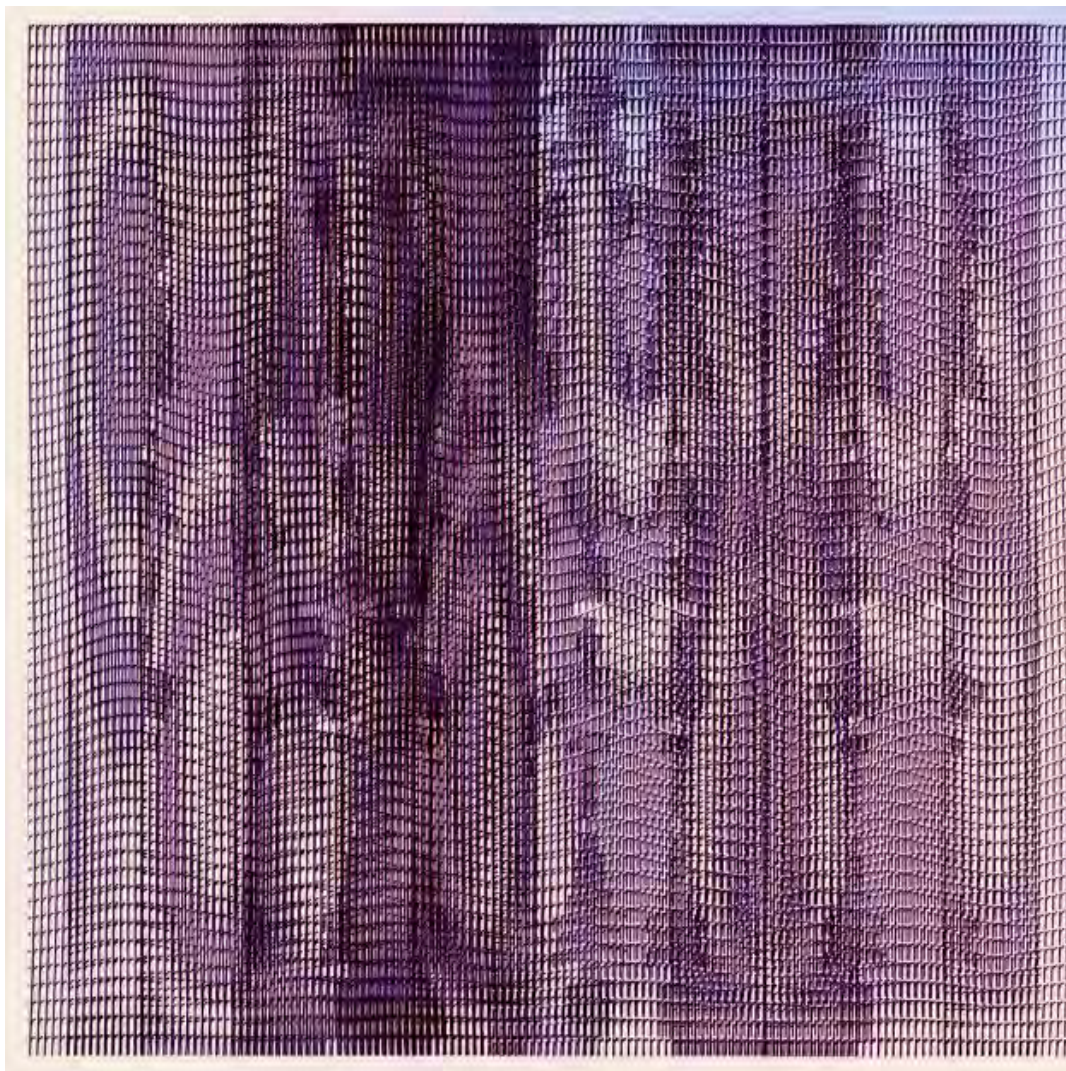


FIG.7: R NET; GRIFFIN, D (2011), DIGITAL DRAWING.

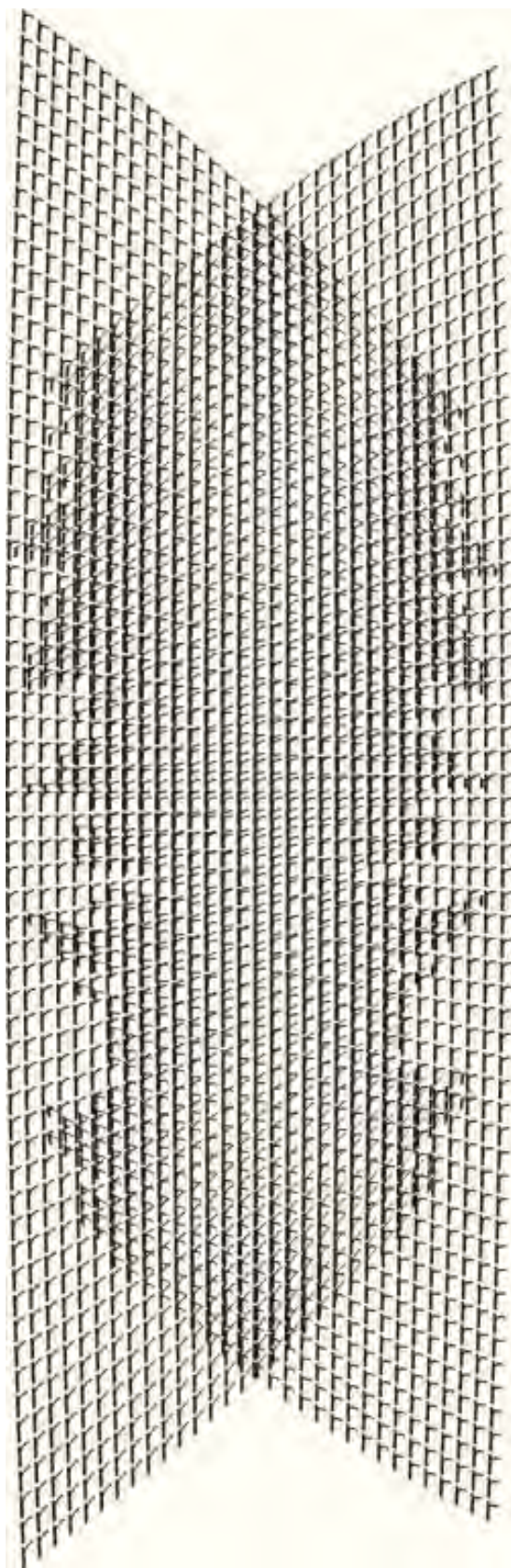


FIG.8: R SCREENS, DIGITAL DRAWING.

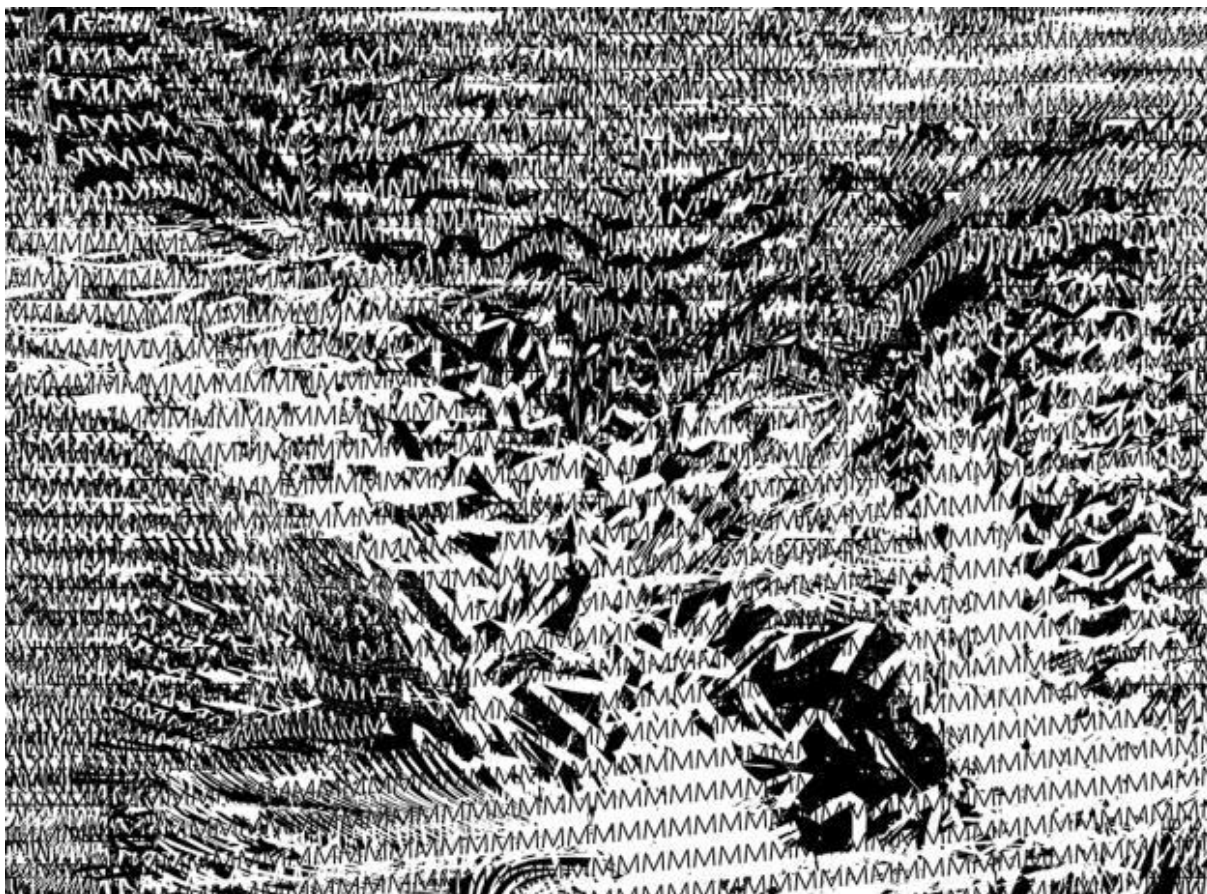


FIG.9: MZ; DIGITAL DRAWING.



FIG.10: SPQR 25, DIGITAL DRAWING.

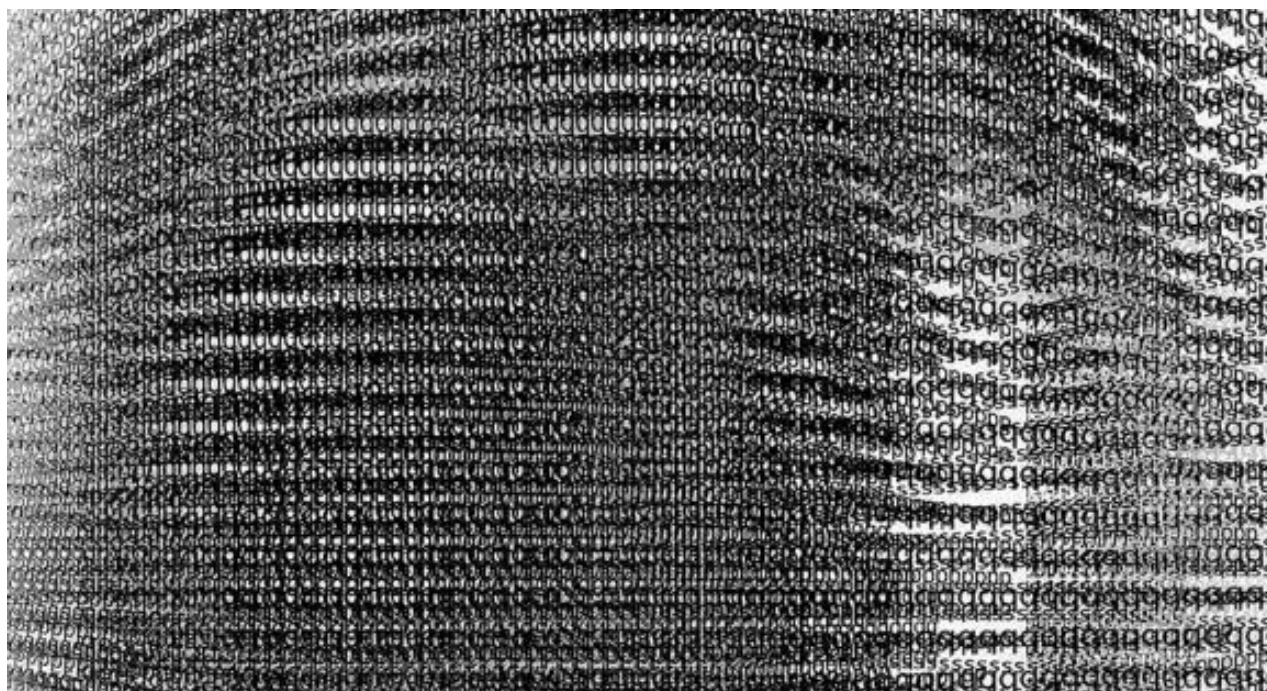


FIG. 11: SPQR2; DIGITAL DRAWING.



FIG.12: RS WEAVE.

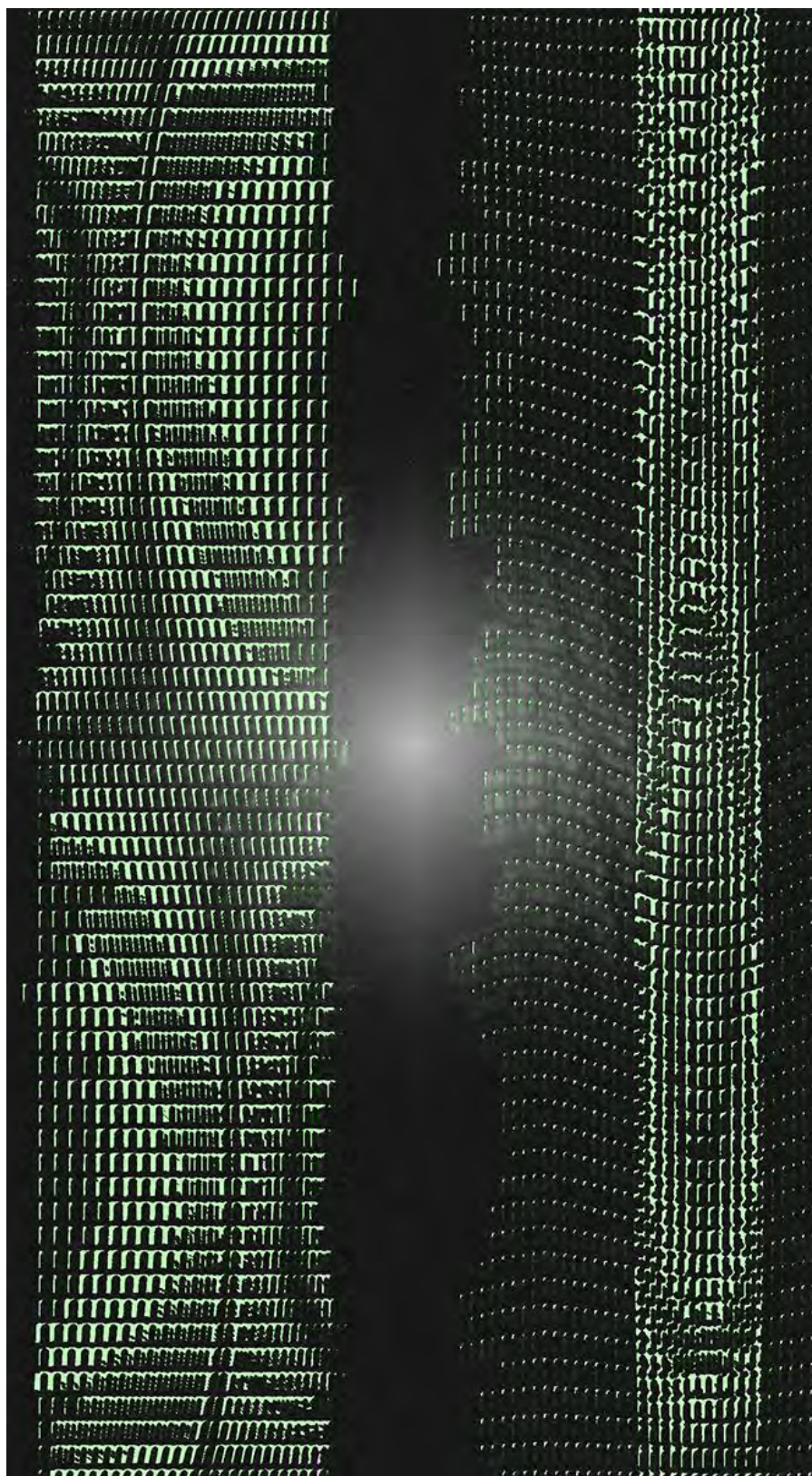


FIG.13: R NETS

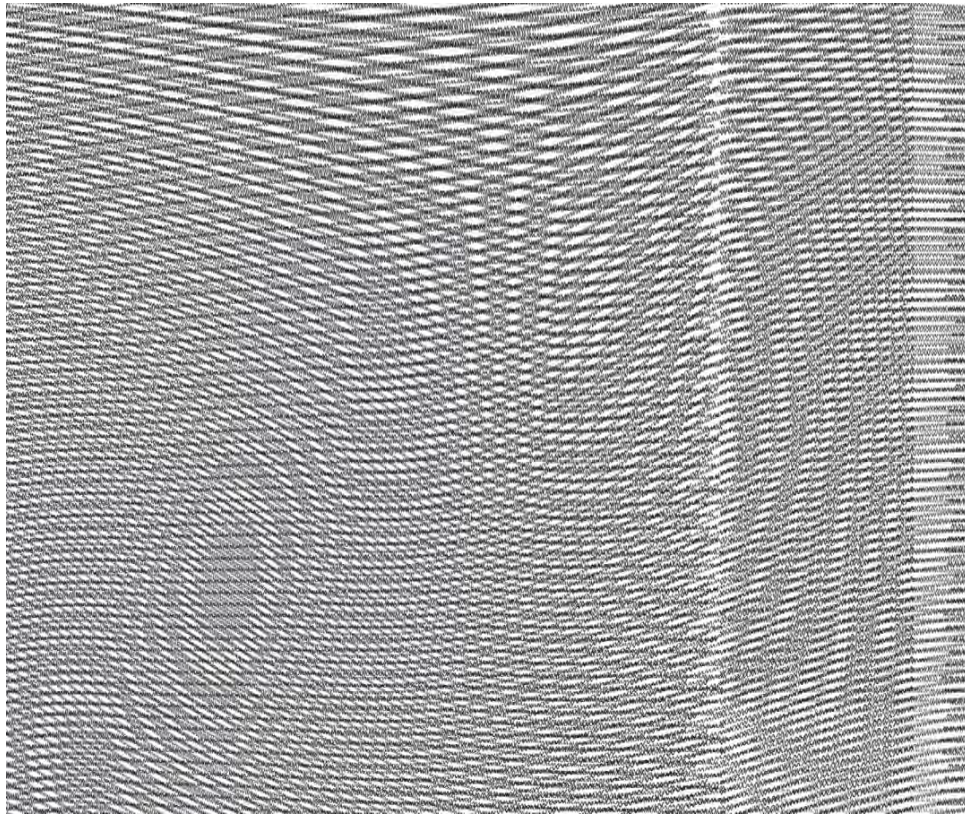


FIG.14: MWZ DETAIL

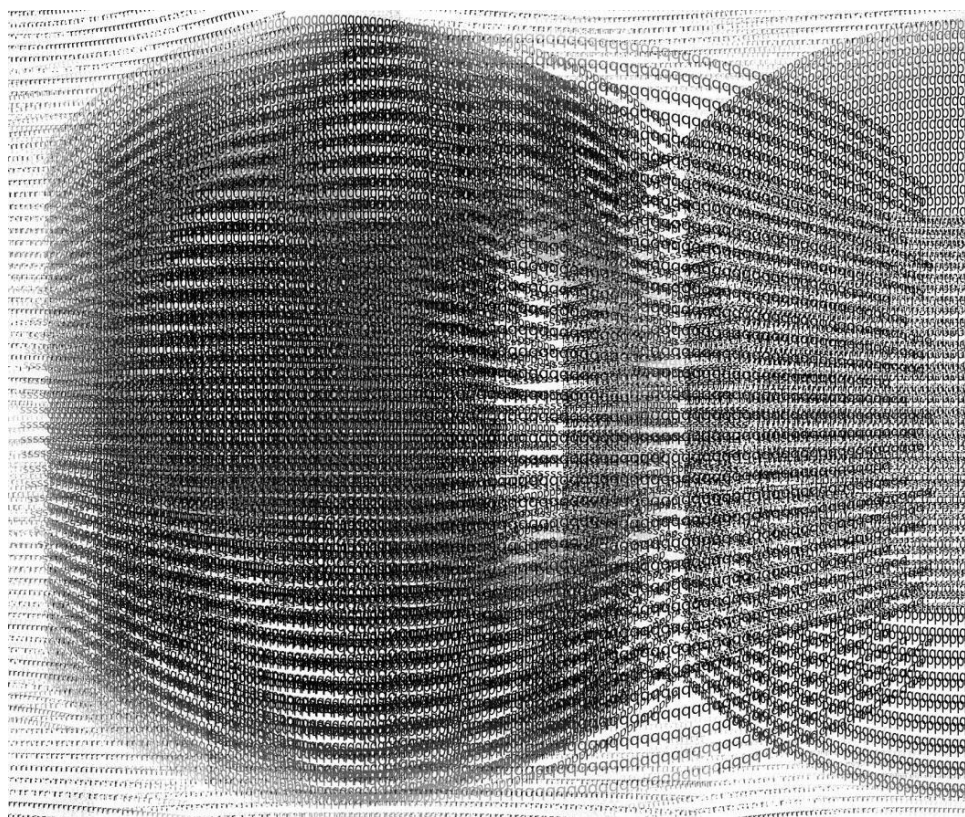


FIG.15: SPQR DETAIL

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